





John Carter Brown.



BIND BY F. BEDFORD

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Not on Tanager or Rich,

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THE REFORMED
VIRGINIAN
SILK-WORM,

Or, a Rare and New
DISCOVERY
OF

A speedy way, and easie means, found out
by a young Lady in *England*, she having made
full proof thereof in *May*,
Anno 1652.

For the feeding of Silk-worms in the Woods, on the
Mulberry-Tree-leaves in *Virginia*: Who after fourty dayes
time, present their most rich golden-coloured silken
Fleece, to the instant wonderful enriching of
all the Planters there, requiring from
them neither cost, labour, or hindrance
in any of their other employ-
ments whatsoever.

And also to the good hopes, that the *Indians*, see-
ing and finding that there is neither Art, Skill, or Pains
in the thing: they will readily set upon it, being
by the benefit thereof inabled to buy of the
English (in way of Truck for their
Silk-bottoms) all those things
that they most desire.

LONDON,
Printed by *John Streater*, for *Giles Calvert* at the
Black-Spread-Eagle at the West end
of *Pauls*, 1655.

THE REFORMED VIRGINIAN SILK-WORM DISCOVERY OF

A speedy way, and easy means, found out
by a young Lady in England the having made
this great discovery in 1752.

For the feeding of Silk-worms in the Woods, on the
Mossy-Trees in the Mountains: Who after four days
some prefer their most rich golden-colored silk
to the infant's wonderful curdling of
all the Yarns there, regarding them
than neither cost labour, or hindrance
in any of their other employ-
ments whatsoever.

And also to the good hopes that the
ing and that there is much Art, Skill, or Talent
in the thing: they will readily set upon it, being
by the benefit thereof enabled to buy of the
Lords (in way of Truck for their
Silk-worms) all these things
that they most desire.

LONDON.
Printed by John Sturges, for John Roberts at the
Silk-worms, at the 7th and
of Paul, 1752.

RECEIVED

JOHN CARTER BROWN

TO THE Reader.

Ingenious Reader,

I Have in my Legacy of Husbandry bequeathed something unto thee concerning Silk-worms, which hath wakened many to search after the means to advance that part of Husbandry. But because the Letter of King Iames to the Lords Lieutenants of the severall Shires of England, for the increasing of Mulberry Trees, and the breeding of Silk-worms, for the making of Silk in this Nation, had not annexed unto them in that Treatise the Instructions tending to that purpose, and being but few, wholly out of print, and very much desired: I thought good upon the occasion of the printing of this Letter to those of Virginia, to publish it also for the benefit of those who shall be willing to employ themselves in this way of industry, which seemeth to be brought unto a more perfect and speedy accomplishment than heretofore hath been known either here or in France, as by the contentes of this adjoynd Letter (wherein the Experiment of a vertuous Lady of this Nation for the breeding of Silk-worms, is addressed unto the Planters of Virginia) is set forth to encourage both them and others to set upon this work, to benefit themselves and the Nation thereby. And truly the Gentleman who doth adresse this Letter to the Planters of the Virginian Colonie is much to be commended for his affection to the publick, because he doth not conceal (as some Muck-worms do for private ends) the Advantages which

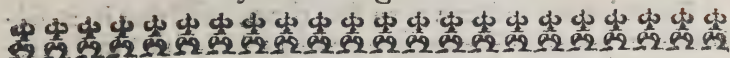
To the Reader.

which may be reaped by singular industrious Attempts or experiments of profit; but desires the benefit of others, even of all, to be encreased. And it were to be wished, that every one to whom God (from whom comes every good & perfect gift) doth impart any rare and profitable Secret of Industry, would open himselfe towards his Brethren, as this publick-hearted Gentleman doth; then would all hands be set a work, and every one would become instrumentall to serve himselfe and his Neighbours in Love, and overcome the burthen of povertie, which for want of employment and decay of Trade, doth lie so heaue upon very many, whose burthens might be either born, or made easie, if all the gifts of God were made use of, for the end for which he doth bestow them, namely, to profit withall towards others, as it becommeth the Members of the same Christian, and Human, and Nationall Society; for the same rule holds in all these respects among such as understand what it is to be a good Commonwealths-man in the State; as well as in the Communion of Saints. And to this good and generous inclination, which I wish may more and more abound in them with the grace of God, I shall leave thee and rest,

Thy most assured and faithfull servant,

SAMUEL HARTLIB.

Instructions



Instructions for the increase and Planting of
Mulberry-trees.

What ground is fit for the Mulberry-seeds, how the same is to be
ordered, and in what sort the seeds are to be sowed therein.



The ground which ought to be appointed for
this purpose, besides the natural goodness
of it, must be reasonably well dunged,
and withall so situated, as that the heat
of the Sun may cherish it, and the nip-
ping blasts of either the North wind or
the East, may not annoy it: The choice
thereof thus made; that the seeds may
the better prosper, and come up after they be sown, you shall
dig it two foot deep, breaking the clods as small as may be,
and afterwards you shall divide the same into severall Beds of
not above five foot in breadth, so that you shall not need to
indanger the Plants by treading upon them, when either you
water or weed them.

The Mulberry seeds you shall lay in water for the space of
22 hours; and after that you shall dry them again half dry, or
some what more, that when you sow them they may not
cleave together: Thus done, you must cast them upon the
foresaid Beds, not altogether so thick as you use to do other
garden Seed, and then cover them with some fine earth (pass
through a Sieve) about half an inch thick. In dry weather
you shall water them every two dayes at the farthest, as like-
wise the plants that shall come of them; and keep them as
clean from weeds as possibly you can.

The time in which you ought to sow them for your best
advantage; is either in *March, April, or May*, when frosts
are either altogether past, or at the least not so sharp, or of
so long continuance, as to indanger their upspring.

There is yet another way to sow them, and that is as followeth: you shall (being directed by a strait line) make certain furrows in the Beds above mentioned, of some four fingers deep, & about a foot in distance the one from the other: After this, you shall open the earth with your hands, on either side of the aforesaid furrows, some two fingers from the bottom, and where you have so opened it, shall you sow your seeds; and then cover them half a finger thick with the earth which before you opened.

When the Plants that are sprung up of the Seeds, are to be removed, and how they are to be planted the first time.

IN the moneths of *September, October, November, December, March, or April* the next year after the Seeds are sown, you may remove their plants, (or in the moneth of *January*, if it be not in frosty weather) and set them in the like Beds as before, and about one foot the one from the other, but first you must cut off their roots about eight inches in length, and their tops about half a foot above their roots, more or lesse, according to the strength of the said plants, for the weaker they be the lesse tops you shall leave them. In this sort you may suffer them to remain weeding and watering them (as need shall require) till they be grown six foot in length above their roots, whereunto when once they have attained, you may cut their tops, and suffer them to spread, alwayes having a care to take away the many branches or succours, that may any way hinder their growth untill they be come to their full length of six foot, as aforesaid.

When, and how the Plants are to be removed the second time, and in what manner they are to be planted where they shall remain.

IN the moneths aforesaid, (according as your plants are waxen strong) you may remove them either into the hedges of your fields, or into any other grounds. If in hedges, you must set them 16 foot the one from the other: if in other ground, intending to make a Wood of them 18 foot at the least

least. But a moneth before you do remove them, you must make the holes (wherein you purpose to set them) about four foot in breadth, and so deep as that their roots may be well covered, and some half a foot of loose earth left under them, having alwayes a special care so to place them, that they may receive the benefit of the Sun, and nor to be shadowed or over-spread by any neighbouring trees.

When, and how the Eggs of the Silk-wormes are to be hatched, and how to order the Wormes that shall come of them.

WHen the leaves of Mulberry-trees begin a little to bud forth, take the eggs of your Silk-worms, and lay them in a piece of Say, or such like stuff, and in the day time carry them in some warm place about you, in a little safe box, but in the night either lay them in your bed or between two warm pillows, untill such time as the Wormes begin to come forth: then take a piece of paper of the wideness of the said box, and having cut it full of small holes, lay it within the same upon the eggs, and upon that again some few Mulberry-leaves, to which the Wormes as they are hatched, will continually come. These leaves with the Wormes upon them, you must still remove into other boxes, laying fresh leaves as well on those that are removed as on the paper where the eggs are; and this is the course which must be duly kept and observed, untill such times as all the Wormes be come forth of their shels, still keeping their boxes warm, as aforesaid; but no longer about you, but untill the Wormes begin to come forth, out of which boxes you may safely take them, when once they have past their second sickness, and feed them upon shels of two foot in breadth, and 18 inches one above the other.

The said shels are not to be placed in any ground-room, nor yet next unto the tiles, but in some middle room of your house which openeth upon the North and South, that you may the more conveniently give them either heat or aire, according as the time and season shall require. Besides you must not make them close unto the Walls, but so as you may
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pasſe about them the better to look unto the Wormes; and keep them from Rats and Mice, which otherwiſe might devoure them. You muſt obſerve the times of their coming forth, and keep every one, one or two dayes hatching by themſelves, that you may the better underſtand their ſeverall ſickneſſes or ſleepings, which are foure in the time of their feeding. The firſt commonly ſome twelve dayes after they are hatched, and from that time at the end of every eight dayes, according to the weather, and their good or ill uſage, during which time of every ſickneſſe, which laſteth two or three dayes, you muſt feed them but very little, as onely to relieve ſuch of them, as ſhall have paſt their ſickneſſe before the reſt; and thoſe that ſhall not fall into their ſickneſſe ſo ſoon.

The whole time that the Worms do feed, is about nine Weeks, whereof untill they come unto their firſt ſickneſſe, give them young Mulberry-leaves twice every day; but few at a time; from thence untill their ſecond ſickneſſe, twice every day in greater quantity; and ſo from their ſecond to their third ſickneſſe, increaſing the quantity of the leaves, according as you perceiue the Wormes to grow in ſtrength, and clear of ſickneſſe: from the third untill their fourth ſickneſſe, you may give them leaves thrice every day, and the fourth being paſt, you may let them have ſo many as they will eat, alwayes having a care that you give them none, but ſuch as are dry, and well aired upon a Table or cloth, before they be laid upon them, and withall gathered ſo neer as may be; at ſuch times as either the Sun or Winde hath cleared them of the dew that falleth upon them.

For the feeding of Worms you need obſerve no other order then this, lay the Mulberry-leaves upon them, and every two or three dayes remove them, and make clean their boxes, or ſhelves, unleſſe in times of their ſickneſſe, for then they are not to be touched; the leaves which you take from them when you give them freſh to feed upon, you muſt lay in ſome convenient place, and upon them a few new leaves, to which the Worms that lay hidden in the old, will come, and then you may paſſe them with the ſaid new leaves

The Reformed Virginian Silk-worm. 5

to the rest of the worms: And now lest any thing should be omitted, which serves to perfect the discovery of so excellent a benefit, I will advise you to be very diligent in keeping clean their Boxes, or shelves, as being a speciall means whereby to preserve them; wherefore when you intend to do it, you shall remove them together with the uppermost leaves whereon they lie, unto other boxes or shelves, for with your hands you may not touch them, till they have thoroughly undergone their third sicknesse, and then may you passe them gently with clean hands, without doing them any harm: provided that the party that commeth neer them smell not of Garlick, Onions, or the like. The first five weeks of their age you must be very carefull to keep them warm, and in time of rain or cold weather, to set in the room where they remain, a pan with coals, burning in it now and then some Juniper, Benjamin, and such like, that yieldeth sweet smells. But afterwards unless in time of extraordinary cold, give them aire, and take heed of keeping them too hot, being alwayes mindfull to store the room with herbs and flowers which are delightfull and pleasing to the smell. As the wormes increase in bigness, you shall disperse them abroad upon more boards, or shelves, and not suffer them to lie too thick together: and if you finde any of them broken, or of a yellow glistening colour inclining to sickness, cast them away, lest they infect the rest, and sort such as are not sick, the greatest and strongest by themselves, for so the lesser will prosper the better.

When and how to make fit rooms for the worms to work their bottoms of silk in, and in what sort the said bottoms are to be used.

AS soon as by the clear amber-coloured bodies of your worms, you shall perceive them ready to give their silk, you must (with heath made very clean, or with the branches of Rosmary, the stalkes of Lavender, or such like) make Arches between the foresaid shelves.

Vpon the branches and sprigs whereof, the wormes will fasten themselves, and make their bottoms, which in fourteen dayes after the worm beginneth to work them, you may

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take away; and those which you are minded to use, for the best silk, you must either presently winde, or kill the worms which are within them, by laying the said bottoms two or three dayes in the Sun, or in some Oven after the bread baked therein is taken out, and the fierceness of the heat is abaid. The other bottomes which you intend to keep for seed, you must lay in some convenient warme place, untill the worms come forth, which is commonly some sixteene or twenty dayes from the beginning of their work: and as they do come forth you must put them together upon some piece of old Say, Grogeran, the backside of old Velvet, or the like, made fast against some Wall, or Hangings in your house.

There they will ingender, and the Male having spent himselfe, falleth down, and in short time after dieth, as also doth the Female when she hath laid her egges, which egges, when you perceive them upon the Say or Grogeran, &c. to be of a grayish colour, you may take them off gently with a knife, and having put them into a piece of Say or such like, keep them in a covered box amongst your woollen cloaths, or the like till the year following: But not in any moist room, for it is hurtfull for them, neither where there is too much heat, least the wormes should be hatched before you can have any food for them.

The making of a Wheel, as likewise the way to winde the said silk from the bottoms, can hardly be set down so plainly, as to be rightly understood: Wherefore when time shall serve, there shall be sent into every County of this Kingdom, a Wheel ready made, and a man that shall instruct all such as are desirous to learn the use thereof: Till when, I will commend these brief instructions to be carefully considered of all such as are willing to benefit either themselves or their Country, that being skilfull in the Contemplation, they may the readier, and with less error apply themselves to Action, which painfull industry, with Gods assistance, will quickly perfect.

An Extract of a Letter from Germany, concerning Silk-worms, written to S. H. Esquire.

AS for keeping of Silk-worms I must confess I have spent likewise some time in the ordering and observing of them in as much as this very year (1653) I have had from them so much good Silk (and equal to that which is brought either out of *Persia* or *Italy*) as have made me two paire of Stockings. And I have found by experience that they may be kept as well in *Germany* as in other Countries, and that Mulberry-trees will grow in abundance upon our Lands; wherefore I have often wished that the Emperour (of *Germany*) would follow the most laudable example of the K. of *France*, who having forbidden the importation of foraigne Silk into his Kingdom hath thereby so much obliged the industry of the People of *France*, that they are come to a great perfection in this Silken Manufacture. But concerning the Experiments of making Silk out of Nettles or out of Flax, I never have tried either of them. Only I remember that I have seen once a very fine and delicate yarne or thred, which was made purely out of Nettels. I do not believe, that those Artists of *Hamburg* and *Wolfenbittel* which you have named unto mee in your Letter, will communicat their Skill for a publique good, as long as they can get their own comfortable subsistence by it.

A Letter written by Mr. Ra. Austen, from Oxford, Febr. 13. 1654. Imparting his Experiments about Silk-worms and how to wind off the Silk from the Bottoms, when the worms have done spinning?

CONCERNING my experiences about Silk-worms, I only say thus much. That I am fully satisfied upon good and sure grounds that the keeping of them (store of them) in these parts would be of very great profit, could we but get Mulberry leaves sufficient to feed them. For upon my own knowledge and experience (last year) upon some thousands of them, I see what

might be by more. For my great doubt and question was satisfied about the winding of the Silke from the Bottoms, when the Worms have done spinning. I plainly see it is very easy, Children of 6. or 7. yeares old can apprehend it, and do it. For the Worms having done spinning, which is within 4. or 5. dayes of their beginning, through out-moist filke is ravel ed off, and the end is found immediately, which runnes on (5. or 10. or 16. or more bottoms together) in a bason of water, a little gum drag mixed. Some Bottoms (if the Worms were strong and well fed) run without breaking, scarce once or twice till all be off, and such as break, are quickly found again. The truth is, if the Worms are scanted of leaves, their silk is so small, that it holds not so well as that of lusty Worms: I saw many brave Skains of Silk wound off the last yeare, and help't to do part of it my self. Now the great matter is, How to propagate Mulberry-trees enough. As for the ordinary way, by boughes, we can have but few that way. I am from time to time experimenting other wayes by Seed, Inoculating, Grafting, &c: what will be the result, as yet I know not: I doubt not, but God will in his good time bring to light and set on foot many good and worthy designes, more then are in these Nations. We had need to labour to be of the like Principles of that worthy person, whose Paper you enclosed, patiently and humbly to waite the Lords season, and to designe for God in all we go about, which will crowne our endeavours with comfort and success.

A Rare and new-discovered speedy way, and easie meanes of keeping of Silk-worms, being thus made knowne to the Colony in VIRGINIA.

HEarken wel you beloved Planters, to what in these few lines I shall declare unto you; and is thus sent you in Print, that all of you may communicate the great and superlative good and benefit will be unto every one of you: *who so is wise, will ponder these things*, and give the praise and glory to God, the Author of all good Inventions; how Providence ha-

ving brought this to pass for all your exceeding great happiness and increase of store of wealth, with so much ease, so little labour, no cost unto you; and in so short a time as fourty daies, this wealth flowes in upon you.

You now I conceive desire to know it, and I am as willing to impart it unto you: thus then in brief, in a plain manner, that all may understand it,

The same Lady, who last year sent you her Books of *Health and Wealth*, (who hath the happiness to beare the honourable name of your incomparable Countrey) continuing her sincere affections to the advancing of your welfares in all kindes; and amongst the rest in this rich work of Silk, knowing *Virginia* to be in all respects most proper for it, (as by a late Book 'ent you published by Mr. *Williams*,) not onely in regard of the Climate being the same with *China*, from whence the infinite quantity of silk comes, but abounding (as it doth) with Mulberry-trees naturally growing there, and exceeding it by the Silkworm-bottoms found in her Woods. She hath I say this Spring found out (by the speciall blessing of God upon her intentions) so rare, so speedy, and so costles a way and means for the feeding of Silkwormes; by the triall and experiment she so luckily made, to the admiration of all that have seen or heard of it, as a thing scarce credible; because not heretofore thought of, nay, as it were, held impossible by such Authours as have written of the ordering and feeding of Silkworms: that this her invention being thus made known unto you, her beloved friends in *Virginia*, she is most confident, and assures herself you will all there instantly without further delay (which will be the joy of her heart) become great and rich Masters of this noble Silk-work to all your unspeakable wealth.

The way to speedy wealth was by some hundreds of you to remove some 60 miles South by land, and to attempt the discovery of the Wester'y Sea, on the border of *Virginia*, and both two very easily achieved, &c.

The lady hath of these Silkworm-bottoms in her Cabinet as Jewels to convince the incredulous, they are ten times bigger then any in Europe to admiration, and of infinite encouragement to the work.

Do but as she hath done; follow but with good courage your cheerfull leader, and doubtless you shall finde (what she desires you may,) namely, *Great profit and pleasure* in an honest employment. This Silken-Mine will be to you of more benefit then a Mine of silver.

In the beginning of *May* last 1652, when her young Mulberry-tree in her Garden began to put out its buds, then her

Contrary to Book Rule.

These eggs were purpose-ly exposed to a rare, cold, winds, and frost, being laid & spawned on a wall in a chamber, and there remained all winter long to try the virtue of the Eggs, &c. And twice before they came out of their bottoms, six times in all.

The seventh, they appear, when come out, a gallant silken white-winged Fly,

No weather it seems hurts them there; from heat and rains they shelter themselves under the great leaves as with a shield, but if either do harm them, how easie is a canvass covering reared over the trees to save them from either of both.

Silkworm-eggs began to hatch, as the nature of this wise creature is, when her food begins once to appear, she comes forth of her shell: she presently laying a Mulberry-leave upon the little crawling creatures, they came all upon it instantly; then she carried the leave and them upon it to the tree, upon whose leaves they made hatt to be; and there they day and night fed themselves, creeping from leave to leave, and branch to branch at their own liberties most pleasing to themselves; they grew and thrived wonderfully, and surpassed in largeness of body the other wormes she kept in her chamber (she having been many a year a Mistress of Silkworms, and kept them by the Book-rules) this good and prosperous beginning heightened her hopes. The wormes, as their nature is, cast off or slipped out of their skins four severall times, still growing greater and greater to the singular delight and content of their Mistress. About 45 dayes thus feeding upon the leaves, they began that rare and glorious work of spinning their Silk-bottomes upon the leaves and branches of the tree; such a gallant sight to behold, it ravished the Spectators, and their Mistress joy was crowned with excess of happiness herein and hereby, apparently finding the incomparable felicity this would prove to her dearly beloved *Virginia*, (for so you must give her leave to call it,) for she concluded, and so must all you, that this being thus effected in *England*, how much more with assured confidence will the wormes live, feed, and spin in *Virginia*? she upon serious and due consideration of this thing, gave God hearty and humble thanks.

And what can any of you now wish, for more encouragement? the full proof is made, the work (or rather let me call it) the pleasure is effected with so much ease, so little cost, hazard or pains, as all may admire it.

'Tis not the hundredth part of your care, labour, or toyl you take about your Tobacco, and an hundred times (as I may say) all things put together more gain and profit to you then you make by Tobacco, which in truth is but smoak and vapour, but this a reall-royall-solid-rich-staple Commodity.

And yet if you will have still smoak, so this neither will nor can hinder your labour in that, or take from you any other employment you have a minde unto. Consider,

Consider, consider I pray you (beloved friends) your incomparable happiness in this thing, and ble's God for it. Surely I should much wrong your judgements and patience if I should spend any more arguments to persuade you to this so great benefit to you, and should be like to him that to manifest the clear Sun-shine at noon-day, brought in a candle.

In a word, there's nothing is or can be wanting but your true thankfulness to God for compleating this happy invention, and your present speedy putting it in practice.

Yet give me leave, before I bid you adieu, to add the incomparable joy this Lady hath, who is confidently persuaded (her daily prayers are to God for it) that this new invented way of thus keeping Silkworms on the Trees; it requiring neither skill nor pains, (this last being the only *Remora*, in the Savages nature, which withholds them from attempting any thing of labour) that when the Indians shall behold and see you begin the business, they will with all alacrity set upon it likewise, and imitate you. And that you to encourage them (as well you may) do agree with them, that for every pound-weight of Silk-bottoms they bring unto you, you give them (as well it deserves) 5 *shil.* worth in any Commodities they desire.

And thus by the blessing of Almighty God, there may be good hope of their civilizing and conversion; so that they may be likewise great gainers both in body and soul by this thing. And if this prove to, (Gods mercies and workes being far beyond our capacities) how much then indeed will *Virginia's* happiness be every way raised to the height of Bliss. The promise being made; *That they that be wise shall shine as the brightness of the Firmament, and they that turn many to righteousness, as the stars for ever and ever;* which the God of wisdom and power grant to you all in *Virginia*, and so, Lord, prosper this work in their hands, Lord, prosper their handy-work; good luck I wish you all in the name of the Lord, *Amen, Amen, Amen.*

Memorandum, that you take notice, that the Birds will eat up the Silkworms on the trees, so that care must be had (and it's easily prevented by severall wayes and means, as you will de-

device) to scare away the birds; if all fail, a boy may be set that may affright them all away with some noise, or by nets encompassing the trees, and the birds will also carry the Silk-bottoms off the trees, if they be let there remain; but that's soon prevented, by taking them speedily away. And this of the birds is the chief reason, that *Virginia* abounds not with plenty of the naturall wilde Silkworms, they devouring most of them: and it's a wonder how any at all escape them, but that God preserves some few of the race, that his power and wisdom may be seen, and the aptnesse of the Countrey to invite you to the work.

For their Bottom being ten times bigger then ours, what mighty great Worms must they be, and what encouragement is this to the businesse, and how much more silk they make then ours, &c.

Till you can get and gain the Egg and Seed of your naturall gallant large Silkworm: which is chiefly that you must endeavour to store your selves with, no Eggs comparable to it, &c.

It will be good for you to encourage the Savages, when they finde any bottoms in the woods, to bring them to you, that you may get of the race, and seed to increase it. Some say, the originall Silkworm is produced by the corruption of the old Mulberry-tree and leaves, by the Sunne and moisture. But that none of you may want a flock to begin your Silk-work, the Lady aforesaid hath sent you store of Silkworm-eggs to be distributed amongst you: and if you begin but with an 100 eggs this year, they will next year be above 1000; for one female Silk-fly will lay 3, 4, 500 at a time, all things more and more concurring to your encouragement.

Now the two Propositions that tend to infinite welfare, benefit, and wonderfull advantage both to *England* and the Co'ony joyntly, are those that follow, they which upon no terms are to be omitted to be published and effected.

First, that with all speed some kinde of Coyne be sent to *Virginia*, that may be authorized to passe there for their Commerce and better trading. But whether all silver somewhat valued above its worth, or part silver and part copper, is left to the wise judgments in that case. But of this confidently be assured, that without some kinde of coyn or other, that Colony can no way prosper or thrive, nor any staple-commodities be set up, or Artificers in any kinde follow their professions: for Tobacco being now their money, and that with which all Commerce is driven, and payments made in, and passeth from man to man; all men are set upon that thing with the neglect of all other rich and solid innumerable Commodities that are
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in that land to be had: and till this remedy of Coyne be applied, there can be no prosperity in that Colony. Were not the thing as apparent to all mens understandings as light is from darknesse; I should alledge many reasons for it, but it's to needlesse to spend time about it, as it might well be thought a great absurdity. What then remains? but that some publique spirited Patriot that would immortalize his name and honour in the procuring of this so necessary a thing to be speedily effected, wherein also as the generall good he shall do, so the benefit will be ever great to those that shall undertake the carrying over this Coyne; be it what it will be, all men know it so well what the gain will be, as there's no need to name it in particular manner, they cannot wish for more profit then that will be to the undertakers, and the Colony will with all their hearts be content with it, and esteeme them happy and thrice happy Benefactors.

The second thing is, that a Publication be procured and sent to the Colony in *Virginia*, declaring unto them, that there shall be liberry for all men to bring from thence for the space of ten years to come, any commodity that they shall there raise, into *England*, Custome and Excize free, (Tobacco onely excepted, which may pay double Custome, if so thought fit:) and further that to what value of money such commodities shall be sold for here in *England*, (being rated at the Customehouse at their entry;) it shall be lawfull to carry out to *Virginia* any Commodities again to the same proportion & worth, Custome and Excize free.

These two reasonable things granted; as they shall infinitely with all speed advance the Plantation, so shall they (all things duly weighed in the scale of prudence) be no lesse beneficiall to *England*, as all men that have their eyes in their heads, and English hearts in their bodies, see and apparantly know, nothing more sure and certain; and all stable and needfull Commodities brought out of all-liberall-*Virginia* into *England* at a very reasonable rate and price, much cheaper then now we have them, and are faine to fetch them with great hazard from doubtfull friends, or Heathen Nations, to their great enriching and our own impoverishing, as to all knowing men is

Sir Francis Drake was Anno 1577 in a Westerly Sea one the back of Virginia, in 37 degrees in opposite to the head of James Town in Virginia and he sailed from that Countrey which he called Nova Albion, in an open Sea to the Molocos and China, and so that also this way a trade may be made to those places to the back of Virginia, &c.

most apparent; we shall be free from the usurpation of forreign Princes and States in our Estates, Lives, Liberties and shipping: and we may conclude boldly and rejoycingly, that Providence hath provided this all-sufficient Countrey of *Virginia* against these times, and to these intents, that hence we may have all we want from our own brethren, our Navy there increased to what number we please; for this incomparable land affords naturally all what's belongs to the building and rigging of a Navy in all compleat manner from top to toe, as may be said; and by a safe, a sure, certain, easie, near at hand westerly discovery, (part by land, and part by Rivers and Seas) contract all the riches of the South-sea, the *Molocos*, *Philippines*, *China*, &c. by 3000 leagues neerer to us, without molestation by any Prince or Pirat, and shall not need at all to be troubled; if *Russia*, *Poland*, *Denmark*, *Sweden*, *Normay*, *Germany*, yea *France*, *Spain*, *Italy*, *Constantinople* were removed 5000 times more distant from us: for in one word, what ever the Countreys afford, either necessary or superfluous, all-sufficient *Virginia* within its limits will produce unto us. And shall there not I say then now be found a zealous Patriot, that will stand up for his Countrey, and procure these things to be done out of hand? Now God forbid; I commit the businesse to God, having done what I conceive my part is, who onely have good wishes, and daily prayers to attend this enterprize, which God prosper, *Amen.*

P O S T S C R I P T.

At a friends importunity, (the former part sent to the Presse) I am thus enforced to make this Addition, and upon the great hopes that upon triall it will be found, that you may have two Silk-harvests in one fix moneths time; of the eggs a second brood may be hatched in *June*, and so fed by Mulberry-leaves, though then it may be it must be in an house, that then for the promoting of such a good designe nothing of encouragement may be wanting, nor any obstructions in the businesse, under pretence of wanting needfull housing for to feed the wormes in. Thus much I will assure you,

That

That the slightest and simplest kinde of housing or coverture (though the books are too superstitious and ceremonious in the rules which are many that they give concerning the ordering of the worm, which are not so necessary as they pretend;) I assure you, you will abundantly content and satisfie this, though noble, yet most humble creature, even with any habitation to do her work in. And to this intent I now declare unto you, (that all excuse may be taken from you) that the poor simple people in *Italy, Spain, Languedock, Provence, &c.* do keep and feed their Silk-worms in the same low earthen-floored Rooms, wherein themselves lodge and do all their houshold-affairs, feeding them on shelves and on tables, giving them leaves without any more curiosity, and they thrive and prosper with them as well as in the greatest Cities and stately chambers of the greatest rich mens Palaces.

And that in *Sicilie* and *Calabria*, the common Silk-Masters Sicily. there do at time of year in the Spring, set up only slight boarded houses in the fields round about the Mulberry groves, and placing shelves in the inside of them, two foot one above the other to the roof, and a table all along the mid of the room, they strowing their leaves on these shelves and table, there feed their wormes, and there they spin in the room their Master lies for the space of five or six weeks time, and they have abundance of silk without more ado, and a man and a boy will tend all the worms that come of six ounces of eggs, and those wormes will spin 60 pound-weight of silk, and that but at 20 *shil.* the pound, is worth 60 *ls.* in ready money, a sufficient gain to allure a man to the work. I tro; but the gain by the naturall worme multiplying will farre exceed it. And I may not forget yet more that the Persian manner is to pitch up, onely tents of *Carvass*, and Booths round their Mulberry-wood, and there-under they strow the Mulberry-tree-leaves on the ground: there their wormes feed and live and spin, and do well in all kindes; the *Persians* living also the time of five weeks in the tents. Thus all these examples do manifestly prove unto you, that very simple and slight housing and a little coverture will content the Silk-worms, and they will thrive well in them. And thus you see that very poor and slight houses in *Virginia*

The great gain of the Silk-works in a house, how much more in the trees, will it be to you. The simplest and slightest houses or covertures will be sufficient for the Worms to feed in, and live and spin, let no man doubt it, &c.

Concerning
the winding
off your Silk,
this Lady hath
sent you one of
the wheels, so
that you may make
the like to do
that work, so
you shall want
nothing to
speed the work

will do the deed. Nay rest assured that the very Savages houses built but with Poles Arbor-wi e, and covered top and sides with mats, will be abundantly satisfactory to the wormes, and they will thrive in them as you shall finde upon triall. And let me tell you, being desirous that you may do all things with the least cost and labour to you, and to invire also the Savages to the work for their own gain; do but take your Reeds and small Canes in *Virginia*, and run but a strong neede and threed thorow the Reeds which will hold them together, and so you may presently make shelves and tables with them as narrow and as broad as you please; and in truth you shall finde this kinde of shelf and tabling to feed your worms on much better in many respects then boards: but you may make triall of the Persian way also by strowing your leaves on the ground in these houses, and so feed them, and so your second brood of Silk- the wheels, so that you may make the like to do that work, so you shall want nothing to speed the work worms may also be thus kept and nourished in this kinde of housing and coverture; Experience is the Mitris of fools, saith that by it all of the Proverb: and it is not an unwise mans part often to make trials, though to some men they may seem impossibilities, yet rare and strange things have upon triall often been found out; and if you would but shew the Savages samples of all kinde of things, you should soon by them know more in a moneth what is in that Countrey to be had then you have done these 40 years; and for reward they would bring in of all kindes unto you, what they have and you desire to know, so a sudden discovery may be made of all things in that land to your infinite gain.

To conclude with this *Memento*, that there are nine things that appear, are of no or small difficulty to you and the Savages to enterprize, and get gain and wealth to be produced from these Commodities; I will but name them and leave them to your better judgements and thoughts.

- 1 This Silke, so easie, speedy, and profitable a thing.
- 2 The Silk-grasse naturally there growing, which to the Indians the onely labour is of putting it up, and bringing it to you at such a price; a rich Commodity if known.
- 3 The planting Vines, small labour, little cost, long enduring.

4 And

4 The multiplying of Cunny-warrens, so easie a thing, the wool of a skin now worth 8 pence, which is more then the body, yet the flesh is considerable meat; the wooll is and will be very vendible for this new Invention. not onely of these fine light hats now sold at 15 and 20 *sh.* but the spinning of the wool, and making stockings of it as fine as those of silke.

5 The increasng of abundance of Bees for wax and honey, their food so plentiful in *Virginia*, as in no Land more, and if with an hatchet you do but slash your Pine-trees, Firre-trees, Locust, and other trees, there will store of liquor come out of them, on which the Bee will gather infinite store of honey and wax, as in *Russia* and other Countreys they do.

6 The planting of Sugar-canes, that being no more laborious then the Indian wheat, setting it, and once set in good Land they grow eight or ten years, and the Indians pains will onely be to cut them yearly down, and sell them to you.

7 That of the Cotton-tree is the like for many years, gathering of the cods of wool from them, as we do Roses from the Rose-bushes.

8 That of Ginger soon done, the planting and the gathering of it.

9 That of grafting your Crab-trees with Apples and Pears for Sider and Perry, you knowing that a man in one day will graft an 100 stocks, and they will grow night and day, while you eat, sleep, and play, and last 100 years to your great gain and profit.

I may not further enlarge my self for the present, these are but tastes and hints for your better wits to worke on: so with a thousand good wishes, I bid you adieu.

Floreat VIRGINIA.

The fashion of the Botome.

The Silke Bottome of the naturall Worm in *Virginia*, found there in the Woods, is ten Inches about, and six Inches in length to admiration: & whereas ours in *Europe* have their Sleeve and loose Silke on the outside; and then in a more closer covering they inclose themselves. These rare Worms, before they inclose themselves up, fill with Silke the great empriness, and afterwards inclose themselves in the middle of it, so they have a double Bottom.

The loose Sleeve Silke is all on the outside of this compass, for if that were reckoned in, the compasse of the Bottom would far exceed this proportion: But this is sufficient to be the Wonder of the whole World: to the Glory of the Creator, and Exaltation of *VIRGINIA*.

A Loving Advertisement to all the Ingenious Gentlemen-Planters in Virginia now upon the Designe of Silk. By V. F. Gentlemen,

SUCH hath bin the singular favour of Providence to you and the Lady, that since the publishing of this Book; it hath so happily lighted into the hands of divers worthy persons, being not only Gentlemen-Travellers of credit, & Merchants of reputation; but likewise wonderfully taken with the love of *Virginia*, and no less zealously affected to the advancement of the Silk-trade in that Land, which they judge (not of their experience and knowledge of what they have and observed in the Easterly parts of the World, where abundance of Silk is made) that no part of the World is more proper for Silk then *Al-lufficient-Virginia*: In regard of the excellency of the temper of the Climate, which naturally produceth not onely Mulberries for food, but the Silk-worme it selfe, in that wonderful greatness of the wilde Silk-bottom: which as they say, The whole Universe affords not, nor brings forth the like to their own small admiration. And that there is no greater quantities of them found or seen they conclude, it is in regard of the birds who are their natural enemies, & devoure most of them. And these Gentlemen are confident, that you did not know & practise those ways and meanes, for the feeding and preservation of them, as in some far remote Regions is practised by those Nations, that are expert Masters of Silk-wormes, *Virginia* would instantly abound with great store of Silk, and surpass all those Countreyes in that rich commodity, and you all become with great speed and small cost, or little labour one of the happiest, wealthiest people that the World affords. And to the intent that such a blessing may not be longer wanting to you, they have out of their superlative benigne affections, and publike spirit, imparted to the Lady these ensuing Relations, with their earnest desires and advices, that you all in *Virginia* may out of hand be made partakers of them. And then knowing them, you may no longer live in gross darkness and ignorance of so great a treasure that you are possessors

of

of, and may now have and enjoy the full use and benefit of, which hitherunto hath most straingly been hidden from the eyes of body and mind ; They conceiving that the chief cause thereof hath been the pernicious blinding smoak of Tobacco, that thus hath dimmed and ob'cured your better intellectualls; but when you begin to put theſe wayes & means in practice, they ſay you will bloſſe your ſelves (as they do) that you have not in this long time diſcovered the infinite wealth and happineſſ that will ariſe unto you out of Silk. But nor longer to detain from you this moſt precious eye-ſalve, for the ſpeedy curing of your infirmity, and making you all rich (which is your main aime in that new world).

Hearken well to theſe Informations, which the Lady earneſtly deſires may thus be with all ſpeed made known to you all.

THe one Traveller declared, That he paſſed a Countrey where he ſaw thoſe people had their Silk-worms feeding on their Mulberry-trees in the fields & there they live & ſpun their Bottoms on the trees, And to proteſt this noble profitable creature & to defend it from the birds, they uſed a moſt ſlight, ſimple, plain invention ſpeedily effected & of no coſt or labour to them, which was certain great ſheets of Reeds or Canes, that they hung over and about their trees, tied to certain poles that incompaſſed them. And in this eaſie manner they obtained great abundant quantities of ſilk, to their wonderful enriching. The ſheets of Reeds were joyned together by a need e and thred, running through each Reed at ſeveral equal diſtances, and ſo drew them cloſe and firm together. This for you to imitate, is in every reſpect to your wonderful happineſſ.

Another of theſe Travellers ſaith, That he paſſed a Countrey where the inhabitants did make large Tents or Boothes all of Reeds and Canes, and in them placed ſhelves and tables made likewiſe of Reeds, on which they fed their Worms, ſtrewing leaves on them. Theſe tents they ſet up round about their Mulberry-Groves, and with much celerity, and no coſt.

A third Gentleman and Merchant, that lived long in the
farther

farthest parts of *Turkey*, affirmeth, That there the inhabitants begin every Spring, *March*, to feed their Worms, and continue it till *October*, six moneths time: their Worms hatching & re-hatching, one generation or brood succeeding the other: so that they have three harvests of silk-bottoms, in that space of time, every five or six weeks one: they feed their Worms in great long Barns made of Reeds or Canes, the walls and roofs of them, and shelves as aforesaid, and the Wormes, when they have done feeding, spin their bottoms upon the reedy walls and roofs; and that they have two crops of leaves from their trees: for those trees that have their leaves pull'd off in *March*, *April*, and *May*, do re-leave again, and have new and fresh leaves in *June*, *July* and *August*, wherewith they feed their latter generation or brood of Wormes very profitably.

And in confirmation of this, you shall know, the same hath been found true in *England*, that the Mulberry-tree will leave twice in a Summer, the Lady had the experience of it, and therefore much more will it do with you, which will be a most singular advantage to you.

I must not omit to add what these Gentlemen farther advise, that you can never sufficiently augment the store of food for this Noble Creature: for store of food is the main foundation, upon whose speeding the Silk-trade is to be erected: for if that be not wanting, no obstruction can be in it. For the glorious Worm is so infinite in multiplication, with that celerity as is incredible, so that she will never be defective unto you; they therefore counsell, that you graft your Mulberries with all care and speed upon these severall trees, upon which they will exceedingly thrive, *v. z.* the *Popler*, the *Elme*, the *Chestnut*, *Beech*, *Quince*, *Medler*, *Fig*, *Peare*, *Apple*, and *Cornell*-trees. And also upon any other trees, of which upon a trial you find the Worm will taste or eat their leaves. Likewise that you set of your Mulberry-slips as big as your thumb, about two foot long, and put them into good wel-digg'd ground in *September*, setting them a foot in the ground, bruising the ends of them, and watering them the next Summer well, if need be: in the same manner as in *Kent*, they set the

Codling-slips. That you also cause the *Indians* to bring unto your habitations all the young Mulberry-trees that are within an hundred miles of your Colony. But let me acquaint you that they admire what some Gentlemen Planters of credit tell them; that your brave Wormes do not onely live, feed, and spin upon the Mulberry-trees in the Woods, but do the same upon the *Poplar*-trees, *Plum*-trees, and *Apple*-trees:: such an encouragement to the *Silk-trade*, the World (say they) never yet heard of before, which must needs lift you up to a most speedy and incomparable height of wealth and riches, in a moment of time.

And by your gentle patience and generosity, give me leave to propound unto you, the earnest request the Lady hath to all of you; that you please to inform her (being also the desire of many others) how it comes to pass that your Wormes get to your severall trees, not only to the *Mulberry*, but to others: For in no other Countreys the *Silk-worme*-flie doth use her wings to flie with: so that yours must either do it (and so at time of yeer couple and flie to sundry trees; and there lay their eggs which remain till Spring again) or that your trees do naturally ingender and produce the Wormes (as it is conceived, the original of them so hapned at first) but which way soever it be, it's rare and remarkable; and proves *Virginia* to be one of the most superlative Countreys in all the Vniverse for the *Silk-trade*; and none comparable unto the excellency of its naturall temper for *Silk*.

Then that you also inform her all you can of the nature, actions, qualities and dispositions in all kinds of this most wonderfull Creature, every way so admirable, what by any *English* or *Savage* hath bin any way observed in her: when her eggs first hatch, then how long time she is feeding before she spins, upon what part of the trees she fastens her Bottom; How long she continues in her Bottom before she comes out a Fly, then when they couple, where they lay their eggs, upon what part of the trees? How long they live after that time? For these in the old World never eat after they once begin to spin: how large in bigness and compass are commonly their bottoms? if all of one colour, or divers? In what part of

of the Countrey are most of them seen and found? what do the *Savages* call them, or know any use of them; what birds are they that most devoure them? (for did they not, they would swarm all the Land over in a very few years); if any thing besides birds be hurtfull to them? Their greatnes and doubleness of their Bottoms are wonderful, none ever known to be so, which argues the strength and richness of this noble Worm, her vigour and hardnes exceeds, that can endure all wethers and seasons both alive and in her eggs. A great encouragement to you all that she is not a nice curious kinde of *Silkworme*; but stout and robustous, that will require little care or attendance, of small cost unto you. But her food and protection is all she requires, and pays you ten thousand-fold for what you bestow on her. That you please to send of her Bottoms to satisfie all men, who are like the Queen of *Sheba*, much better trust their eyes than eares; some of their eggs likewise upon that which they lay them, and the Fly (though dead) which will many a yeer retain her perfect form in a box: do not the wormes hatch and spin twice or thrice in a Summer?

Let me add one Petition more, and I have done. *viz.* That some of your precious Silk-grafts may be sent the Lady, who is confident upon the triall she will make of it, she will give you so pleasing an account and so profitable unto you, in making known unto you what an unknown wealth you have: she prays you (and all is for your own gain) to bore and cut all your trees (a most easie thing) and thereby you shall discover presently, what rich Gums, what Balsoms, what Oils, and precious healthful Liquours they will yield you for profit & necessity: For all men know that many kindes of trees do yield most pleasant and healthsome Wines (as I may call them) for man to drink; so also you will finde out all sorts of Dies and Colours (instantly done): cut and bruise all kindes of your Woods, Barks, and Leaves of Trees, Roots, Berries, Nuts, Fruits, Plants, Weeds; and but boil them in a Skillet, and then put in a little piece of white Woollen or Linnen cloth with some Allom, and you shall instantly finde and see what rich Colours they will make. What is *Indico* but a Weed, so

Woad and Madder? What is Brasil, Fustick, Logwood, and many more kinde of Dies, but Woods? what Concheneal the rich Scarlet die, but a Fly, or the excrements of the *Indian* Fig-tree? what is the new-found rich dying stuff of 25. l. a Tun, but of a tree that is brought from the Island of *Liberty*, neer Cape *Florida* where Captain *Sailes* plants? And shall *Virginia* not yield a drop of good Liquour or Colour? It cannot be; if but a triall thus easie were made; ~~but but not to be~~

By burning of all kinde of Woods and Gums, you'll soon finde by your nose what sweet Perfumes they yield. And by the ponderousness or weight of earths, you may know if Minerals or not? Let it be known also, if you have not Waters of more than ordinary qualities; for taste, colours, smell, weight, hotness, or coldness; there is much depends upon them. And you shall know if they proceed out of any Minerals, by taking a glass full, and putting into it a Gall beaten to powder, which will turn the water into a reddish colour: and send samples of all kinde of strange earths, and of all other kinde of things without fail. And lastly, (if it be not too much presumption to beg the favour to receive that honour from you) which she no wayes deserves nor can hope to requite: To inform her what be the things, the wayes, the means to advance *Virginia's Prosperity*, if they may be procured and effected. If any error be committed in telling you all this: there is hope your pardon may be obtained, seeing your onely good and benefit hath caused all this that hath been said: and the zeal of your wealth and happiness hath drawn all to this length:

Sirs, you have the faithful testimonies of those aforesaid worthy Gentlemen, and nothing can be now wanting unto you but putting all in practice, what they have declared; and for your good are such invitations and encouragements unto you, that more cannot be wished for. There remains nothing but humble thanks to God, and to these Gentlemen your due respects, whom God hath made such Instruments for your happiness, hoping their noble courteous examples will allure all other Gentlemen Travellers to cast into this good work some mites of their further knowledges, and every man

to contribute his prayers and help to this or any other hopeful designe: seeing the consequence of them may be so good and great, not only to the *English* Nation at home and abroad; but to the poor *Savages* their welfare of souls and bodies, which God grant.

Another Advertisement.

THe Silk-Trade, (unlesse we will be deaf to Reason and Experience) cannot be denied the precedency of all Trades that are at this day a foot, in either World: And that in regard of its great and certain gain in so small a time; A man and a Boy being able to tend as many Silk-worms in two Moneths space, as will yeeld you sixty pounds: * which done, they leave you ten Moneths free for any other imployment. In regard of its small skill, lesse pains, care and labour, no hazard, no cost or charge, (more then a twelve-penny Reel) no troublesome tools or Implements: in regard of its incredible ease and pleasure, as not requiring strength of Body, of Wit, of Purse, any stock to begin with, only hands and eyes to gather leaves and feed the Worms with, or protect them from the Birds: if kept on the Trees (their natural Mansion:) Admitting of all Ages, (for a Child can do all that belongs to it) all Sexes, all Qualities, (a most fit recreation for Ladies, especially being begun and ended in the two pleasantest Moneths of the year, *March* and *April*.) And all Callings too; for if Saint Paul made Tents, who can plead exemption from tending Silk-worms? * Again, Silk is lesse chargeable in Ware-House, Freight, &c. then any other Commodity, and yet none more durable, lasting, neat, vendible, nor more easily transportable: for Five hundred pounds worth of Silk, freights lesse, and takes up lesse room then ten pounds worth of Tobacco.

According to that is made in Sicille by a Man and Boy.

A most proper imployment for the lasie Indians.

Now where Worms and Food abound naturally, and the Inhabitants are born with Brains, the advancement of the Silk Trade must needs be proportionable: upon which double score *Virginia* hath the advantage of any place in the yet discovered World; I mean for Worms and Food, which may be thus severally demonstrated. Their Worms (partly annually

produced by heat and moyſture as our Caterpillars and other Inſects each Spring, partly by Eggs which have eſcaped the Birds who are the greateſt caule of their ſcarſity (which otherwiſe would ſwarm over all the Land) devouring them when they are Worms, Eggs and Bottoms) exceed ours not only in ſtrength, hardineſſe and greatneſſe, (being when Flyes as big as mens Thumbs) but alſo in the largeneſſe of their Bottoms, which are as big as Limons ; (for Mr. *William Wright* of *Nanſamond* found of them above ſeven inches round) and one of them weighs more then a ſcore of ours ; inſomuch that whereas a Thouſand of our Worms made but one pound of Silk, worth at moſt here 30s. a pound, a thouſand of their natural Worms will make ten pounds of Silk, worth here twenty ſhillings the pound. And certainly they need not object or be troubled at the ſomewhat more courſneſſe of their Silk, ſince they from the ſame number of Worms receive ten pounds in money for our thirty ſhillings.

As for their Food, the *Virginia* Worms feed not only on the Mulberry (their ſole food in all other parts of the World) but alſo on the Crab, Plum, Poplar ; Oake, Apple, Cherry and Pohickerry-tree leaves, with ſundry other ſhrubs and buſhes. For proof whereof, Miſtreſſe *Mary Ward* ſent over to her Couzen ten bottoms taken from Apple trees. Eſquire *Ferrar* her Kinsman likewiſe ſent her ten more, pulled off from Oaks and divers ſhrubs. Mr *Laurence Ward* ſome taken from the Pohickerry tree, Mr *Wright* from the Cherry tree. So Mr *Ruſſel* and others.

The Objection, or rather groundleſſe ſurmiſe of the Worms being hurt by Thunder in *Virginia*, is ſufficiently cleared, not only by the Natural Worms living ſo well, and thriving there ſo admirably on the trees ; but alſo by trial made there this Spring of our Worms. That ever to be honoured Noble Squire *Diggs* having (at his very great charge) ſent for two *Armenians* out of *Turky* ſkilful men, and made ten pound of Silk, which had not want of Eggs hindred him, would have been ſo many Thouſand pounds.

Nothing then wants to make *Virginia* rival *Peru* for wealth, more then to perſwade the Planters to provide themſelves this
Winter

Winter (to lose no more time) of as many of the Natural Worms bottoms as possibly they can. They will now be found in the Woods on the dis-leaved trees, though molt of them are spun by the Worms on the tree leaves, which falling to the ground, they perish with them; and this is another great cause that so few bottoms are to be found. The Bottoms thus gotten must be carefully kept in some long boxes till the Flies come forth, happily in February or March. For they remain in their bottoms 300. dayes, ours but 20. so that their Eggs (whereof one female will lay a spoonfull, suppose 500.) lye unhatched but about nine dayes, ours nine moneths.

When your Worms are hatched, you may keep them either on the trees (being assured that they will live on that kind of Tree whatsoever it be from whence you took your Bottoms) and then you shall need onely to protect them from the Birds; or else in some slight kind of housing, Reedy arbors, Indian mansions, or what else you can devise there cheapest and speediest, and then your onely labour and care is to give them leaves, which you may either strip off, or clip from off your Trees, or if you will, lop off little branches (which may perhaps prove a good way for you: for thereby the leaves will remain the longer fresh) and give them to your Worms, who for the labour of every Man and Boy thus inployed only in two moneths time, will repay you with three score pounds worth of Silk.

Your own Experience (Gentlemen) will I hope ere this time twelve-moneth certifie you of the truth that is here set down, unlesse you shall rather chuse to hugg your own poverty, and make much of that slavery and drudgery you wear out your selves with, in toyling about that contemptible, beggarly *Indian Weed*;

T O B A C C O.

The Copy of Esquire Diggs his Letter, to his much honoured freind, John Ferrar, Esquire at his house at little Gidding, in Huntingtongshire. From Virginia, June 21. 1654.

Sir,

I Have received your many and severall Letters, printed papers, and Quarries; and, would my occasions have permitted, I should ere this, have given you that due thanks you deserve, and punctually have answered all your judicious and pleasing Quarries: But I was so taken up in sending dayly for Mulberry-leaves, as they are now so far scattered from my present Plantation, that I could not possibly answer your expectations; That onely difficulty made me to make but 400. pound weight of Silk-bottomes, which I caused to be wound of 7. or 8. l. of Silke in a day: Sir, I doe very well approve of your last well printed Paper, sent the Colony for making triall of the Naturall Silk-worme, but such was my ill happe, that I could not this spring meet with any of those Bottoms, but shall this next Winter procure of them, all I can; Sir, I am now confident, I have conquered all the great feared difficulty of this rich commodity, and made its sweet easy and speedy Profit so evident to all the Virginians (and that it doth not at all hinder their too much beloved Tobacco, but that they may proceed with both together) that now I doubt not (nor they) but that in a skort time here will be great quantities made of Silke; you in England will reape much advantage, and gaine many waies by it, (more then most men can pet see) and I by Gods blessing the comfort and joy, in setting up so noble, so beneficiall, a staple vendible commod' ty. My people differ very little from the rules set down in your, Mr. Williams his Booke, and as Esquire Samuell Hartlib hath also directed in his advertisement of Silk-worms unto us; only in the hatching of the Worms-Eggs; they are more curious, of which I shall, when I have more time, give you a more particular accompt: I made 10. l. of seed or Eggs this spring to give away to diverse Planter's, that are very earnest (seeing so great a benefit before their eyes) to become also Silk-masters; you need not feare it but that this next spring there will be divers tryalls made of the hopeful Naturall Worms, that you so highly prize (and not without good cause) and which is more, perhaps they may fall one after another

ther and be re-hatched that we may have a double Silk harvest in one summer (as you have formerly hinted to us). Pray Sir will you be pleased at this time to excuse my too much brevity in this great business of so much concernment, of so much happiness to this Country, and attribute it to my great hast, and much business upon the ships sudden departure, having many more dispatches to make to Friends; But in my next, I shall make you double amends; I pray present my service to the vertuous Lady Virginia: Sir I daily pray for your long life, and well-fare, and now rest.

Sir your most humble Servant,
Edward Diggs.

A Way Experimented by Mr. Farrar, to make the Gummy-hard Naturall Virginia Bottoms (which hetherto by no art could be prepared to unwind by reason of the Gummy hardness) to unwind with ease, to the great advantage of the Planters of the Silk-trade in Virginia.

YOU must take Sope-boylers lye or liquor, which is very sharp and strong, and set that in a vessel over the fire till it be warme, then put in as many of your hard gummy Bottoms as you please, and let them rest in that liquor, till it be scalding-hot, and so remain half a quarter of an houre more or less, till they be so dissolved, that you may take out one and find it fit to unwind; which you must thus doe.

First put the Bottoms into scalding clean water, and having layen a while therein, then take them out and proceed to unwind them as the custome is.

In case Sope-boylers lye or liquor be not to be had, you may make a strong liquor of the Ashes of any Wood, with boyling water, the stronger the better, and this may and will also perform the work. And this is just as you make a lye to buck clothes withal. Only note it must be very strong made.

An

An Extract out of, a very Ingenious Gentlemans Letter from Dublin, Concerning the Reformed Virginian Silk-worm.

I Thank you for your *Virginian Paper*. Me thinks the Experiment is most Natural to my apprehensions; that the Worms should feed and thrive best upon the leaves growing on the Trees; rather than in the Houses; and that they, like other Caterpillers (of whom these are a sort) did at first breed so; and that Houses were rather an Invention for expediency,

But their Proposition about Money to be carried to *Virginia*, I utterly dislike; even so much as if it were possible, I would banish Money from *Ireland*.

An Animadversion upon the Letter from Dublin.

I like not the Gentlemans Reason why he likes the Proposition concerning feeding of Silk-worms upon the Trees.

For almost all Plants, even the most rare now in use were Originally (namely since the deluge) wild and past muster amongst Weeds; & are improved to such a degree of excellency to the eyes, nose or palate, by industry and home-helps and contrivances: So *John Tradeskin* by *Lambeth*, by the advantage of putting his Trees, and other Plants into a warm house in winter or a stow, nurses up those things faire and fragrant, which would without that help either dye or be dwarfed. This is the reason why tame Pigeons or Conies are larger, and breed better, and oftner than wild. Yet I conclude not against the thing it self; for questionles, that the leaves have more heart, fresh and Greene, than halfe withered; if the cause of their withering were known or considered; But I can say little to this, as having no experience,

A new observation, concerning the feeding of Silk-worms with Lettice, imparted from Dublin.

I Have only to present you with some observations I made concerning the feeding of Silk-worms (meeting here accidental

cidentally with a kinswoman of mine that keeps great store of them) which generally is beleeved only to be done, with *Mulberry* leaves: the contrary of which is here by some practised, *viz.* to feede them with *Lettice*; which the worms eat very readily, grow as big as those that are fed with *Mulberry* leaves & spin as much *Silk*: They will also eat the hearb called *Dantedelyon*, but whether that will so well agree with them as *Lettice*, I have not tried, but with *Lettice* they will thrive very well, eating nothing else all the year.

More Observations concerning the feeding of Silk-worms with Lettice,

SIR,

MY good Cousen Mr. W. sent me the letter, you wrote to him; and the note sent you out of *Ireland*, that intimated the happy success the Gentlewoman had then in keeping *Silk-worms*, not only on the *Mulberry-tree-leaves*, but with *Lettice* leaves, the thing you much desired that my Daughter should have made known unto her. Truly Sir your singular humanity and goodness in all things more and more extends it selfe for the publique benefit of all, and I see to the particular satisfaction of your Freinds, though Strangers to you yet those that have daily cause more and more to honour you, as we justly do. Sir, this your favour is both by my self and Daughter so much resented as it requires from us, very hearty and particular thanks to be tendered to your worth. She is a lover of Rarities in these kinds, and to try conclusions upon her *Silk-worms*, and noway envious, but much rejoices to hear that any have had that good success with *Lettice* as you write of, and shall her self againe make a third triall in that kind, for she hath 2. yeares last past tryed her self to have kept some with *Lettice* leaves & so did & they thrived as well as those kept with *Mulberrys*, but still when the time of spinning came they would not spin, but then dyed and this put her out of heart to try further, yet I may tell you, she perswaded a Gentleman near her to keep some with *Lettice* 25. daies and then fed them with *Mulberrys* at last, and the did very well and spun as good Bottoms as those wholly kept with *Mulberry*

leaves. But now she resolves upon your intimation of the experiment made in *Ireland* to try a third time, and to give you an accompt of her success in *June* next, if God permit.

And now Sir she presents this printed inclosed paper to your worthy judgment, if you find not it matter of consideration and reason for her to send it as a second new yeares gift to *Virginia*, hoping that it may do good there to the Planters and informe them of much truth, and invite them to the busines of Silk, which God grant, *Amen.*

This other paper of Ryming lines (for Verses they deserve not the name) yet being that what her Brother a young Scholar hath collected out of Letters, that were lent her from *Virginia* and given her, she also sends you to further informe you of things done, last spring.

Thus worthy, Sir, with the due respects of both our kindest salutes, wishing you all happines in this and the better world, I rest ever.

Yours in all love and service.

Littell Gidding Hunting shire

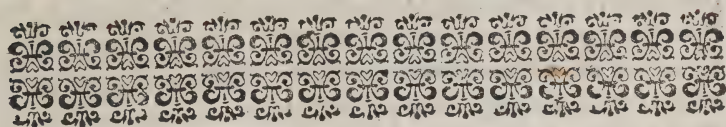
JOHN FERRAR.

this 28. Novemb. 1653.

SIR,

She makes bold to present you with a sample of *Virginia* Silk-grafs sent her by a freind. It's a rarity, and she hopes will delight you who have such a publique Spirit to rejoyce, and further a Common good; as she hath great hopes this will prove a commodity next to the Silk there, as skilfull men and Artists do assure her of it, and thousands of poor people will be set a work with it, if it prove there to be in quantity.

Upon



Upon the most Noble, Virginian natural Silk-Worm
 her wonderful, various, plentiful food; The infinite,
 speedy, great wealth she will produce to her prote-
 ctor; (in 45. days the time of her feeding) with small
 labour, cost, or skill, (learnt in an hours space
 by any child.) The singular aptness of that rare Su-
 perlative Climate, in Breeding them on so many se-
 veral kinds of Trees in her Woods where they live
 Feed and Spin, their mighty large, strange, double-
 bottoms of Silk: To the admiration of this our Old
 World; but to the exaltation and glory of incompa-
 rable *Virginia*, in the New.

W Here Wormes and Food doe naturally abound,
 A Gallant Silken Trade must there be found:

Virginia excels the World in both,
 Envie nor Malice can gaine say this troth.
 Many a man the causes faine would heare,
 How these rare Worms came first or still come there.
 Insects produced are by heat and moisture
 who in strange Shapes and formes do oft appeare.
 In Spring our trees the Caterpillers reare;
 Their trees likewise these noble creatures beare.
 And some proceed from eggs that scaped are
 From their enemies sight, which thing is rare.
 They feed not only on the Mulberry
 which in our World sole food is held to be

For all such precious Worms of that degree:
 But Popler, Plum, Crab, Oake, and Apple tree,
 Yea Cherry, and tree called Pohickery:
 So on the Shrubs and Bushes feed full many
 Her Worms are huge whose bottoms dare
 With Lemmons of the largest size compare.
 And twenty one of ours will sure poize less
 Then one of theirs for weight and ponderousness.
 Master William Wright of Nansamound
 Found Bottoms above seven Inches round.
 And though the Silk prove not all out so fine
 As Persian, that's no let to the designe.
 For since a thousand of our Bottoms make
 But one pound of fine Silk, you'l ten pounds take
 From theirs. If we at Thirty Shillings sell
 Our pound, for twenty they'l afford theirs well.
 The paines that's taken is alike in either
 But the gaines by theirs eight times greater:
 Then, we confined are to the Mulberry
 For food, their worms have great Variety.
 Her dainty coloured flies and large worms
 In length and bigness do surpass mens Thumbs.
 Whereas ours short of little fingers come.
 Our flies come out in twenty days and lay
 Eggs, theirs not still three hundred as they say
 O wondrous thing! a worm to fast so long
 And then come out a painted Fly so strong.
 Nine mouths full out our eggs unbatch't remaine
 Nine daies in Spring makes theirs revive againe
 A Planter (I wish they had him named)
 A spoonfull eggs from one fly he gained
 Which to five hundred at least amounted
 Loe shortly endless they must be counted.

In March they first begin to live and feed
In Aprill they have done the Silken deed
The sweetest, pleasantst time in all the yeare.
You to this wealth the chanting Birds will cheare
And ten moneths time they leave you with great ease
To spend it in what profit you shall please.
Rare Worms who feeding five and forty daies
On leaves of sundry Plants and shrubs repaies
Their keepers with fine Silke which wants no strength
And yet extends it selfe some miles in length
And for the labour of a Man and Boy
They gaine you Sixty pounds which is no toy.
If you from Birds prote& them on the trees
(Their naturall mansions) it will them best please
Your paines is spar'd in giving them the leaves
By which alone you gaine their Silken sleeves
For non-parrel Virginia in her woods,
Brings forth as all men know these precious goods:
Where thousand fleeces fit for Princes Robes
On Virgin-trees shall hang in Silken Globes.
The noble Worm so hardy, strong and stout
No weather ill is able them to rout.
The reasons why the numbers are so small
Lesse Cruell Birds devour most of them all
When they are Worms yea Eggs or Silken ball.
Most bottoms likewise on the leaves are spun
Both falling to the ground do perish soon
Those only found that spun are on the branch
Not by their care but providentiall chance
Which only shew themselves when all is bare
To Find in Summer any 'tis most rare.
If to prevent both dangers you intend
A Reedy-Arbour well will doe't, you'll find

Or

Or slightest coverture in any kind
 The skill and paines to all each Child can do:
 As you shall find on triall tis most true.
 And may in wealth compare with rich Peru.
 And for all Tooles that appertaine thereto
 A Twelve-peny Reelee is all it will cost you,
 No wit, no strength, no purse, no Stock will need
 But Eies and hands, the Worms to guard and feed.
 And thus you see done is the Silken deed:
 Which brings you so great wealth with so much speed.
 Five hundred pounds worth of rich Silk, all know
 Fraights less then ten pounds in poore Tobacco
 Silkes are no trash, no toy, nor Pedlars ware;
 Staple, good, and ready chinke every where.
 Twenty shillings a pound t'will yield you cleare
 And Ships to fetch it will come flying there.
 Queenes of the best edition need not scorne
 In her owne Livery to serve this Worm:
 Only to give her leaves is all she craves
 And in reward with Silk shee'l make you brave.
 Out of her rich belly by her mouth spurs
 Weaves it into a most curious bottom
 Which by a Reelee turning with hand of man
 Is wholly wound off most neatly againe.
 To feed Silk-worms no Caling can disdain
 Seeing they yeild you so much honest gaine.
 No imployment in the world so likely
 To make so soone your lasie Savage wealthy.
 For his Silk bottoms in exchange shall have
 From English, what he so needs, begs, and craves
 Red coats, hose, shooes, knives, they highly deeme
 Jewes-Trumps, Bells, Beads, all toys, no less esteeme.
 If all be thus the cause you now demand

why

*Why hath this knowledg been thus long detain'd
And but now by the Ladies Books inflam'd
Ignorance of Planters so strange hath been
Till now ne're knew nor dreamt of this rich thing
Confest it is, that o't some they have seene
Regardlessly, but ne're did them esteeme.
Which loss of wealth and Honour they'l regaine
And Virgins Counsell follow will amaine.
The happy onset they this Spring have made
Assures them all a stately pretious trade.
Sir Henry Chichly that Heroick Knight
Affirmes ther's not an ingenuous wight
In Virginia but makes all speed he can
To be e're long a Silken noble man.
And say, Colonel Ludlow certifies
That thence from Silk great profit will arise;
Rea worthy Bernard that stout Colonel
Informs the Lady the work most facile
And of rich Silken stuffs, made shortly there
He hopes that he and others shall soone weare.
So major John Westropè saith, Silk will be
A gallant designe for their brave Country.
Thunder was that, that some men onely doubt
But triall made this Spring puts that feare out.
In all Lands where Worms are kept tis wonder
To heare that any were harm'd by thunder.
Their naturall Worm proves this more truer.
Mr. Gorge Lobs that prudent old Planter
Tels her that Worms ne're spun Silk daintier.
Lets give those Gentlemen their full dues
Mistress Garret and Burbage for Silk dues.
That Colonells wife needs not farr to rove
Her Court affords a pleasant Mulberry Grove :*

But noble Diggs carries the Bell away
 (Lass! want of eggs made so small the essay)
 His two Armenians from Turkey sent
 Are now most busy on his brave attempt
 And had he stock sufficient for next yeare
 Ten thousand pound of Silk would then appeare
 And to the skies his worthy deeds upreare.
 Loe here what mistress Mary Ward hath sent
 And to her Lady Cosin she presents
 Ten rare Bottoms took from her Apple tree
 That all England may it beleeve and see.
 Her honour'd Kins-man Esquire Ferrar,
 To confirme and make the wonder greater
 Ten more likewise hath sent her, which he found
 On stately Oakes and Shrubs that kiss the ground
 And Doctour Russel that learn'd Phisitian
 Hath with his, made a full addition.
 For things more slowly do affect the minde
 Which eares do heare then those that eies do find.
 Now from smoke Virginia shall be raised
 And throughout the World be duly praised.
 Ah Blest be God that now in his due time
 This Silken light apparently doth shine.
 Then come, O come with sacred Lays
 Let us sound the Almighty's praise

I. F.

To the most Noble deserving Esquire Diggs: upon the Arrivall
 of his two Armenians out of Turkey into Virginia.

Courage, brave Sir : sith Ayde from God is sent
 Proceed, go on, drive forth thy great intent.

A



A Comparison between the gain and labour of
TOBACCO and SILK.

Tobacco requires 9 moneths time, much care and labour, both without and within dores, and a mans Crop is commonly 15 hundred weight of Tobacco, and this at two pence a pound is 14 pound gain.

Silk requires six weeks time, if done in a house, and by the labour of a man and boy, in gathering leaves, and tending the worms that come of six ounces seed, there is by 10 many worms spun as much Silk as will weigh sixty pound weight, and this but at 20 *shil.* a pound, yeelds 60 *l.* in ready money.

Tobacco, leaves a man but 3 moneths in the year for other busines.

Silk, leaves a man ten moneths time in the year, for any other employments.

14 pounds a man gaines by his Crop of Tobacco.

60 pounds a man and boy gains by his Crop of Silk.

Then let all men judge which is the more gainfull.

But what will be the gain and profit, by the worms feeding and spinning on the Trees is more considerable, and also the naturall *Virginia*-worms bottom exceeding ours in *Europe* 20 times in bigness, and in weight: what a Treasure then will this be, and no labour, cost, hazard, expence of time at all, a Boy onely to keep away the Birds from eating the Silk-worms on the Trees, &c.

This

us learned Battas upon this noble & admirable Creatur.

Y^Et may I not this wonderful worm pass by,
Of fly, and worm, and of a worm a Fly.
Two Births, two Deaths, here Nature hath assign'd her,
Leaving a *Posthum*, dead-live Seed behind her;
Which soon transforms the fresh and tender leaves
Of *Thistles* pale tree, to those tender leaves
(On *Ovall* Clues) of soft smooth silken Flax,
which more for us then for her self she makes.
O precious fleece! which only did adorne
The sacred loins of Princes heretofore;
But our proud age, with prodigall abuse,
Hath so profan'd the old honorable use:
That Shifters now, that scarce have bread to eat
Disdain plain Silk, unless it be beset
With one of those brave Metals; whose desire
Burns greedy soules with an impartiall fire.

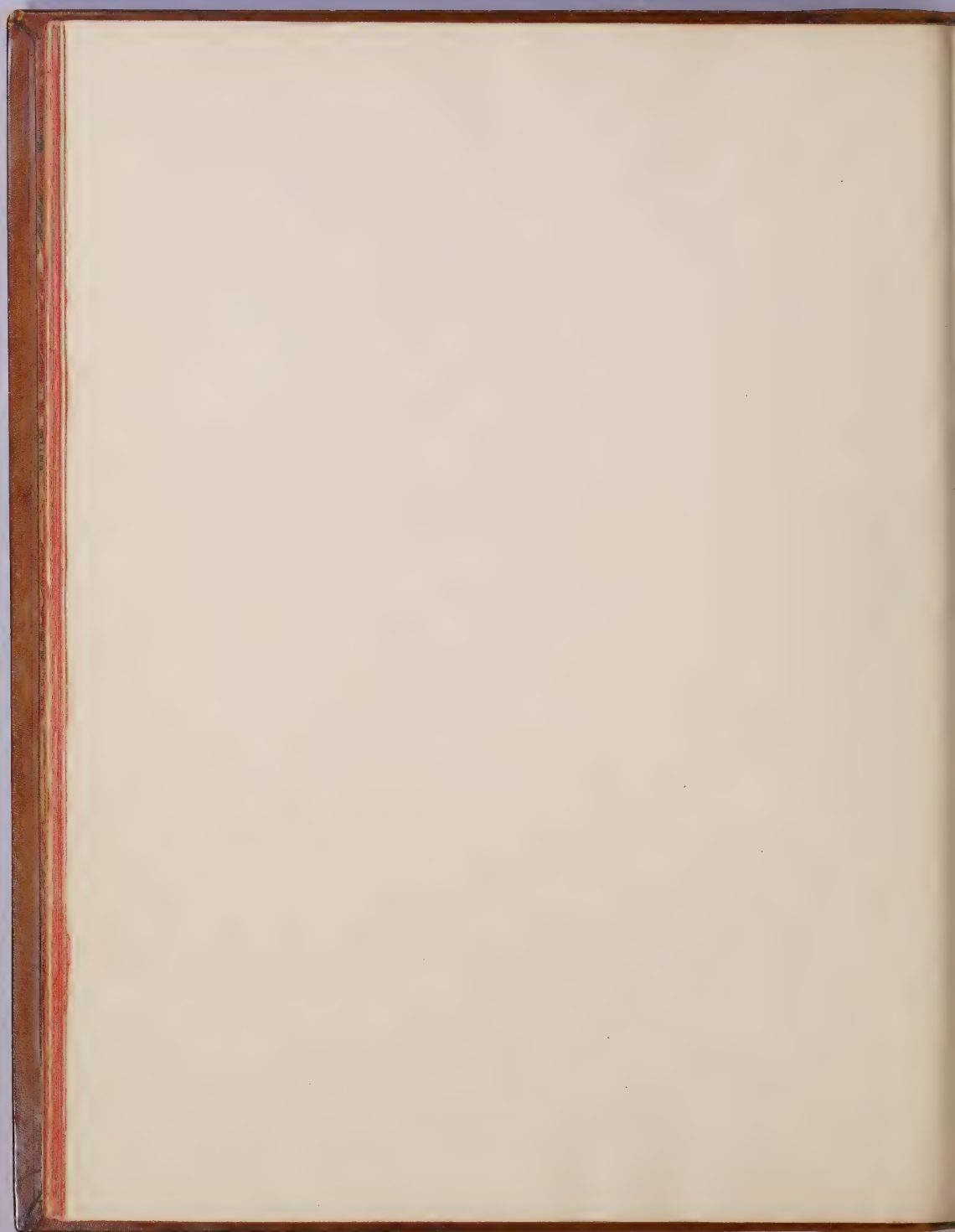
Had Du Bartas fully known all the vertues and rarities
in this incomparable Creature, even a miracle in Nature,
he would have enlarged his Poems in a more ample manner
in the praise of it, to the great honour of the Creatour.
Cui Gloria, Amen.

Homo Vermis.

Wee all are creeping Wormes of th' earth,
Some are Silk-Worms great by birth,
Worms some that shine by night,
Some-Worms others, apt to bite,
Some are muck-Worms slaves to wealth,
Maw-Worms some that wrong the health,
Some to the publique no good willers,
Canker-Worms and Cater-pillers;
Found about the earth wee'r crawling,
For a sorry life wee'r sprawling,
Putrid stuff we suck, & fills us,
Death then sets his foot and k'ls us.

FINIS.





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